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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,147	10/07/2005	Norifumi Kikkawa	09812.0115	7147
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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			EXAMINER HUSSAIN, IMAD	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/552,147

Applicant(s)

KIKKAWA ET AL.

Examiner

IMAD HUSSAIN

Art Unit

2151

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Applicant's amendment dated 25 April 2008 has been received and made of record.
2. Claims 30-32, 39-42, 44-47, 51-54 and 56-58 have been amended. Claims 30-58 remain pending.

Response to Arguments

3. Applicant's arguments, see Applicant's Remarks page 18, filed 25 April 2008, with respect to the rejection(s) of claim(s) 30-58 under 35 U.S.C. 102 and 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mahesh Balakrishnan et al. (US 6473903 B2, hereinafter *Balakrishnan*) or Michael J. Freeman et al. (US 2002/0129374 A1, hereinafter *Freeman*).

Applicant argues that with regard to claim 30, similar claims and dependent claims, neither Ritchie nor Debiq suggests or teaches that "the content distribution control section streams the content, corresponding to the channels, the content being simultaneously streamed over a single connection as a single unit of controlled content represented by a single URL (Uniform Resource Locator), on the basis of a control request corresponding to a second channel list received from the client."

In response to Applicant's argument, Examiner notes the combination of Ritchie and Debiq does teach that *the content distribution control section streams the content*

[Ritchie: page 7, paragraph 2], *corresponding to the channels* [Ritchie: page 7, paragraph 1 and Debiq: section 7.8], *the content being represented by a single URL (Uniform Resource Locator)* [Debiq: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"], *on the basis of a control request corresponding to a second channel list ["InstanceID" "identifying the content item"] received from the client* [Ritchie: section 5.3, item 7].

Examiner agrees that neither Ritchie nor Debiq explicitly discloses *the content being simultaneously streamed over a single connection as a single unit of controlled content*.

However, Balakrishnan discloses that *content is simultaneously streamed over a single connection as a single unit of controlled content* [Balakrishnan: Figure 2 and Column 4 Lines 10-18].

Ritchie-Debiq and Balakrishnan are analogous art in the same field of endeavor as both describe network media services. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the multiplexing scheme of Balakrishnan for providing multiple media streams over a single connection as a single unit of controlled content in the media system of Ritchie-Debiq. One of ordinary skill in the art would have been motivated to modify the media system of Ritchie-Debiq with the multiplexing scheme of Balakrishnan because in doing so, the system would allow for greater interactivity in selecting content [Balakrishnan: Column 1 Lines 43-50].

Alternatively, Freeman discloses that *content is simultaneously streamed over a single connection as a single unit of controlled content* [Freeman: Paragraph 0063].

Ritchie-Debique and Freeman are analogous art in the same field of endeavor as both describe network media services. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the multiplexing scheme of Freeman for providing multiple media streams over a single connection as a single unit of controlled content in the media system of Ritchie-Debique. One of ordinary skill in the art would have been motivated to modify the media system of Ritchie-Debique with the multiplexing scheme of Freeman because in doing so, the system would allow for seamless switching between content [Freeman: Abstract].

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. **Claims 30, 31, 33-38, 42, 43, 45, 46, 48-50, 54, 55, 57, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie et al. (*UPnP AV Architecture:0.83*, hereafter Ritchie) in view of Debique et al. (*ContentDirectory:1 Service Template Version 1.01*, hereafter Debique) further in view of Mahesh Balakrishnan et al. (US 6473903 B2, hereinafter *Balakrishnan*).**

Regarding claim 30, Ritchie teaches *a content providing server* [Ritchie: *Media Server* and *Control Point*, sections 5.1 and 5.3] *that executes a content transmission process to*

a client [Ritchie: MediaRenderer, section 5.2] connected via a local area network

[Ritchie: "home network", page 7, paragraph 1], comprising:

-a tuner that receives content over channels [Ritchie: page 7, paragraph 1 "TV tuner" and "satellite/cable receiver" receive content over channels];

-a data transmission/reception section that executes a communication process between the server and the client via the local area network for the content and control information [Ritchie: page 5, paragraph 5];

-a storage section having attribute information corresponding to the content as content information [Ritchie: Content Directory Service, section 5.1.1];

-a content management section providing the content information to the client [Ritchie: Content Directory Service, section 5.1.1]; and

-a content distribution control section that executes live streaming [Ritchie: page 7, paragraph 2] of the content to the client via the local area network [Ritchie: section 5.3, item 7],

-wherein the storage section stores a first channel list [Ritchie: Content Item, section 5.1.1], and

-wherein the content distribution control section streams content, corresponding to the channel [note: singular] [Ritchie: page 7, paragraph 1] on the basis of a control request corresponding to a second channel list ["InstanceID" "identifying the content item"] received from the client [Ritchie: section 5.3, item 7].

Ritchie does not explicitly disclose the treatment of multiple channels *as a single unit of controlled content represented by a single URL (Uniform Resource Locator)* or that the channel list *includes the identifier channels*.

However, Debiq teaches that "a playlistContainer instance represents a collection of [multimedia] objects... audio, video, and images" [Debiq: section 7.8] and "may have an element for playback of the whole playlist" [Debiq: section 7.8] and also that a "channelName" may be used to identify a tuner channel therein [Debiq: Appendix B]. Therefore, Debiq teaches treating multiple channels *as a single unit of controlled content represented by a single URL (Uniform Resource Locator)* [Debiq: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"] and that the *channel list includes the identifier channels*.

Ritchie and Debiq are analogous subject matter in the same field of endeavor, as both cover the art of streaming media across a local area network. One of ordinary skill in the art at the time the invention was made would have been motivated to modify Ritchie's identifiers with the resource identifier types provided by Debiq as doing so would allow for different types of content to be identified. In addition, Ritchie makes explicit mention of using Debiq's *ContentDirectory* [Ritchie: section 5.1.1, page 7]. Moreover, Ritchie and Debiq were released by the same organization (the UPnP Forum), share a common author (John Ritchie) and clearly state that they are "for UPnP Version 1.0" on their respective front pages. Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.

The combination of Ritchie and Debique does not explicitly disclose that *the content being simultaneously streamed over a single connection as a single unit of controlled content*.

However, Balakrishnan discloses that *content is simultaneously streamed over a single connection as a single unit of controlled content* [Balakrishnan: Figure 2 and Column 4 Lines 10-18].

Ritchie-Debique and Balakrishnan are analogous art in the same field of endeavor as both describe network media services. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the multiplexing scheme of Balakrishnan for providing multiple media streams over a single connection as a single unit of controlled content in the media system of Ritchie-Debique. One of ordinary skill in the art would have been motivated to modify the media system of Ritchie-Debique with the multiplexing scheme of Balakrishnan because in doing so, the system would allow for greater interactivity in selecting content [Balakrishnan: Column 1 Lines 43-50].

Regarding claim 31, Ritchie-Debique-Balakrishnan teaches that:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators) [Debique: section 2.8.5.2] *including the single URL* [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];
-the second channel list comprises the single URLs [Debique: section 2.8.5.2];

-the storage section is configured to store the URLs [Debique: section 2.8.5.2] as attribute information corresponding to the content [Ritchie: Content Item, section 5.1.1]; and

-the content distribution control section is configured to stream the content on the basis of the single URL, according to the control request from the client [Ritchie: section 5.3, item 7].

Regarding claim 33, Ritchie-Debique-Balakrishnan teaches that:

-the content information contains protocol information [Ritchie: section 5.1.1] comprising a function ID ["channelName"], as tuner identification information, corresponding to the tuner [Debique: Appendix B]; and

-the content distribution control section is configured to set a control instance that executes control over the content [Ritchie: section 5.1.1] by executing control over the tuner based on the function ID [Debique: Appendix B, "channelName"].

Regarding claim 34, Ritchie-Debique-Balakrishnan teaches that:

-the content distribution control section sets a control instance to execute control [Ritchie: section 5.2.2] for streaming content [Ritchie: section 5.1]; and

-a tuner [Ritchie: section 5.1] control instance that executes control over the content by controlling the tuner on the basis of the control request from the client [Ritchie: section 5.2.2].

Regarding claim 35, Ritchie-Debique-Balakrishnan teaches that:

- the content distribution control section is configured to:
 - set a control instance to execute control [Ritchie: section 5.2.2] for streaming content [Ritchie: section 5.1]; and
 - execute connection management based on a connection management table [Debique: serviceStateTable, pages 60-62] comprising an instance ID [Ritchie: section 5.3, step 5] as an identifier of the control instance, a connection ID as a connection identifier between the server and the client [Ritchie: section 5.1], and protocol information corresponding to the content [Ritchie: section 5.1.1].

Regarding claim 36, Ritchie-Debique-Balakrishnan teaches that:

- the content distribution control section is configured to:
 - set a control instance for streaming content wherein the control instance is configured to have an instance ID set as an identifier [Ritchie: section 5.3]; and
 - execute the content distribution control according to a control request from the client [Ritchie: "This InstanceID is used in conjunction with the device's AVTransport Service (i.e. the device returning the AVTransport InstanceID) to control the flow of the content (e.g. Play, Stop, Pause, Seek, etc)", section 5.3, step 5], wherein the client request designates the control instance ID [Ritchie: section 5.3, step 5].

Regarding claim 37, Ritchie-Debique-Balakrishnan teaches that:

-the content distribution control section is configured to:

- receive a control request from the client, for streaming the content,*

wherein the control request is compliant with a SOAP (Simple Object Access Protocol)

[Ritchie: "components interact with each other using... standard UPnP protocols (e.g., SOAP over HTTP)", page 6, paragraph 5]; and

- execute distribution control over the content on the basis of the control request [Ritchie: "This InstanceID is used in conjunction with the device's AVTransport Service (i.e. the device returning the AVTransport InstanceID) to control the flow of the content (e.g. Play, Stop, Pause, Seek, etc)", section 5.3, step 5].*

Regarding claim 38, Ritchie-Debique-Balakrishnan teaches that *the first channel list* ["playlistContainer"] *is configured to be set as a list formed from the plurality of channels* ["channelName"] *divided according to categories* ["genres"] [Debique: section 7.7].

Regarding claim 42, Ritchie-Debique-Balakrishnan teaches *an information processing apparatus* [Ritchie: *MediaRenderer* and *Control Point*, sections 5.2 and 5.3] *that receives content from a tuner set in a server* [Ritchie: *MediaServer*, section 5.1] *via a local area network* [Ritchie: *home network*], *comprising:*

- a data transmission/reception section that executes data transmission/reception process with respect to the server that provides content via the local area network* [Ritchie: section 5.2], *wherein the tuner receives the content over channels* [Ritchie: section 5.1] *and the server stores a first channel list including the channels* [Ritchie:

section 5.1, where a "TV tuner" offers channels and Debique: section 7.8, where a "playlistContainer" groups offered media in a list, including Debique: appendix B tuner channels "channelName"]; *and*

-a control section [Ritchie: Control Point, section 5.3] configured to:

-transmit to the server, via the local area network, a content transmission request [Ritchie: section 5.3, item 7] including a second channel list [Debique: section 7.8, "playlistContainer"], the second channel list including a plurality of the channels included in the first channel list [Debique: section 7.8, "playlistContainer" where Ritchie: section 5.3, item 7 demonstrates that the request includes a subset of available items]; and

-transmit a distribution control request for the content, wherein the server designates a control instance that executes control over content streaming [Ritchie: section 5.3, item 7],

-wherein the data transmission/reception section receives content corresponding to the plurality of channels as a single unit of controlled content, the single unit of controlled content represented by a single URL (Uniform Resource Locator) [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"] and streamed over a single connection [Balakrishnan: Figure 2 and Column 4 Lines 10-18].

Regarding claim 43, Ritchie-Debique-Balakrishnan teaches that

-the control section is configured to:

- *-transmit a connection preparation request to the server, to acquire an ID of the control instance wherein the ID comprises a tuner identification function ID [Ritchie: section 5.1.1 "metadata" "properties" include Debique: appendix B "channelName" used for identification of tuner channels] based on protocol information stored in the server [Ritchie: section 5.3, step 4]; and*
- *-transmit the distribution control request for the content, wherein the acquired control instance ID is included in the distribution control request [Ritchie: section 5.3, step 5].*

Regarding claim 45, Ritchie-Debique-Balakrishnan teaches *a content transmission control method for transmitting content from a tuner, set in a server, [Ritchie: MediaServer, section 5.1] to a client [Ritchie: MediaRenderer and ControlPoint, sections 5.2 and 5.3] via a local area network ["home network"], wherein the tuner receives the content over channels and the server stores a first channel list including the channels [Ritchie: section 5.1, where a "TV tuner" offers channels and Debique: section 7.8, where a "playlistContainer" groups offered media in a list, including Debique: appendix B tuner channels "channelName"], comprising:*

- setting a control instance, wherein content corresponding to channels in a second channel list is set as a unit of content to execute control over streaming of the content corresponding to the second channel list [Ritchie: "this action may return the InstanceID of an AVTransport service that the Control Point can use to control the flow of this content", section 5.1.2];*

-receiving a control request, designating the control instance, from the client via the local area network [Ritchie: figure of section 6.4]; and

-controlling the tuner by using the control instance designated in the control request [Ritchie: section 5.3, step 6]; and

-streaming the unit of content based on the control request, wherein the unit of content is streamed over a single connection [Balakrishnan: Figure 2 and Column 4 Lines 10-18] and is represented by a single URL (Uniform Resource Locator) [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"].

Regarding claim 46, Ritchie-Debique-Balakrishnan teaches that:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators) [Debique: section 2.8.5.2] including the single URL [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];

-the second channel list comprises the single URL [Debique: section 2.8.5.2];
and

-setting the control instance further comprises associating the single URL with the control instance [Ritchie: "the MediaServer can distinguish between multiple instances of the services (channel or channel list) by using the InstanceID (control instance)", section 5.1.3].

Regarding claim 48, the claim comprises substantially the same limitations as claims 45 and 33. The same rationale for rejection is applicable.

Regarding claim 49, the claim comprises substantially the same limitations as claims 45 and 35. The same rationale for rejection is applicable.

Regarding claim 50, the claim comprises substantially the same limitations as claims 45 and 37. The same rationale for rejection is applicable.

Regarding claim 54, the claim comprises substantially the same limitations as claim 42. The same rationale for rejection is applicable.

Regarding claim 55, the claim comprises substantially the same limitations as claim 43. The same rationale for rejection is applicable.

Regarding claim 57, the claim comprises substantially the same limitations as claim 45. The same rationale for rejection is applicable.

Regarding claim 58, the claim comprises substantially the same limitations as claim 54. The same rationale for rejection is applicable.

6. Claims 32, 39, 41, 44, 47, 51, 53, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie in view of Debique and Balakrishnan as

applied to claim 30 above in and further in view of Dave Conger (*Playing Audio on Your PPC From Your Desktop*, hereafter Conger).

Regarding claim 32, Ritchie-Debique-Balakrishnan teaches:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators)

[Debique: section 2.8.5.2] *including the single URL* [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];

-the second channel list comprises the single URL [Debique: section 2.8.5.2];
and

-a connection for streaming of the content between the server and the client is an HTTP (HyperText Transport Protocol) connection [Ritchie: section 6.5] *set on the basis of the single URL.*

Ritchie-Debique-Balakrishnan does not explicitly disclose that *the content distribution control section streams the content via the HTTP connection before and after channel switching, wherein the channel switching comprises switching between channels described in the second channel list.*

However, Conger teaches a method by which a single HTTP connection [Conger: Starting the Media Stream, Connecting With Your Pocket PC] may be consistently used before and after channel ("song") switching [Conger: Extra Notes, second bullet point].

Conger and Ritchie-Debique-Balakrishnan are in the same field of endeavor as both cover the art of streaming media across a local area network. One of ordinary skill

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in the art at the time the invention was made would have been motivated to modify Ritchie-Debique-Balakrishnan's HTTP streaming technique with Conger's single-connection approach as doing so would allow for media to be broadcast without the break in streaming otherwise associated with switching streams. Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claim 39, Ritchie-Debique-Balakrishnan-Conger teach the server of claim 30 as discussed above wherein:

-the content distribution control section [Ritchie: ControlPoint, section 5.3] is configured to:

- *-set a URL as an identifier for the second channel list [Debique: section 2.8.5.2];*

- *-receive an HTTP-GET method as a content request from another client, the request invoking the URL [Ritchie: section 6.5]; and*

- *-stream, through an HTTP connection, content based on the URL invoked by the client [Conger: Starting the Media Stream, Connecting With Your Pocket PC].*

Regarding claim 41, the claim comprises substantially the same limitations of claim 32.

The same rationale for rejection is applicable.

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Regarding claim 44, the claim comprises the limitations of claim 32 and 42. The same rationale for rejection is applicable.

Regarding claim 47, the claim comprises the limitations of claim 32 and 45. The same rationale for rejection is applicable.

Regarding claim 51, the claim comprises substantially the same limitations as claims 45 and 39. The same rationale for rejection is applicable.

Regarding claim 53, the claim comprises substantially the same limitations as claims 45 and 41. The same rationale for rejection is applicable.

Regarding claim 56, the claim comprises substantially the same limitations as claim 44. The same rationale for rejection is applicable.

7. Claims 40 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie in view of Debique and Balakrishnan, further in view of Conger, and further in view of RFC 2616 (Hypertext Transfer Protocol -- HTTP/1.1, hereafter RFC 2616).

Regarding claim 40, the claim comprises substantially the same limitations as claim 32. The same rationale for rejection is applicable. The claim further comprises the additional limitations that:

- the content distribution control section is configured to:*
 - *determine whether or not streaming to the client can be maintained even when there is switching between the channels described in the second channel list; and*
 - *execute breakage of the HTTP connection where it is determined that the streaming cannot be maintained; and*
 - *the content providing server is configured to notify breakage information about the HTTP connection via an event notification connection between the server and the client.*

Ritchie-Debique-Balakrishnan does not explicitly disclose a means for determining whether the coded data transmission to the client can be maintained, for breaking the transmission if it cannot, and for notifying the client of HTTP breakage. However, RFC 2616 teaches that the server may become aware that it is incapable of performing a client request [RFC 2616: section 10.5, first paragraph and section 10.5.1] and also that the sever will break ["close"] an HTTP connection on an error [RFC 2616: section 10.4, second paragraph]. Additionally, RFC 2616 teaches a plurality of error codes (e.g., 409, 500, 501) that are used in the process of notifying breakage information about the HTTP connection via an event notification connection between the server and the client [RFC 2616: *response status code*, section 10.5, first sentence].

RFC 2616 and Ritchie-Debique-Balakrishnan are in the same field of endeavor as both cover the art of streaming data across a network. One of ordinary skill in the art at the time the invention was made would have been motivated to modify Ritchie-Debique-Balakrishnan's HTTP server and streaming technique with RFC 2616's response status codes and error reporting procedures as doing so would allow for clients to be notified of errors via a standardized set of codes and allow for a graceful close of connections. Therefore, the invention as a whole would have been "*prima facie* obvious" to one of ordinary skill in the art at the time the invention was made.

Regarding claim 52, the claim comprises substantially the same limitations as claims 45 and 40. The same rationale for rejection is applicable.

8. Claims 30, 31, 33-38, 42, 43, 45, 46, 48-50, 54, 55, 57, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie et al. (*UPnP AV Architecture:0.83*, hereafter *Ritchie*) in view of Debique et al. (*ContentDirectory:1 Service Template Version 1.01*, hereafter *Debique*) further in view of Michael J. Freeman et al. (US 2002/0129374 A1, hereinafter *Freeman*).

Regarding claim 30, Ritchie teaches a *content providing server* [Ritchie: *Media Server* and *Control Point*, sections 5.1 and 5.3] *that executes a content transmission process to a client* [Ritchie: *MediaRenderer*, section 5.2] *connected via a local area network* [Ritchie: "*home network*", page 7, paragraph 1], *comprising*:

-a tuner that receives content over channels [Ritchie: page 7, paragraph 1 “TV tuner” and “satellite/cable receiver” receive content over channels];

-a data transmission/reception section that executes a communication process between the server and the client via the local area network for the content and control information [Ritchie: page 5, paragraph 5];

-a storage section having attribute information corresponding to the content as content information [Ritchie: *Content Directory Service*, section 5.1.1];

-a content management section providing the content information to the client [Ritchie: *Content Directory Service*, section 5.1.1]; and

-a content distribution control section that executes live streaming [Ritchie: page 7, paragraph 2] *of the content to the client via the local area network* [Ritchie: section 5.3, item 7],

-wherein the storage section stores a first channel list [Ritchie: *Content Item*, section 5.1.1], and

-wherein the content distribution control section streams content, corresponding to the channel [note: singular] [Ritchie: page 7, paragraph 1] *on the basis of a control request corresponding to a second channel list* [“InstanceID” “identifying the content item”] *received from the client* [Ritchie: section 5.3, item 7].

Ritchie does not explicitly disclose the treatment of multiple channels as a *single unit of controlled content* or that the channel list *includes the identifier channels*.

However, Debique teaches that "a playlistContainer instance represents a collection of [multimedia] objects... audio, video, and images" [Debique: section 7.8] and "may have an element for playback of the whole playlist" [Debique: section 7.8] and also that a "channelName" may be used to identify a tuner channel therein [Debique: Appendix B]. Therefore, Debique teaches treating multiple channels as a single unit of controlled content and the use of a list including identifier channels.

Ritchie and Debique are analogous subject matter in the same field of endeavor, as both cover the art of streaming media across a local area network. One of ordinary skill in the art at the time the invention was made would have been motivated to modify Ritchie's identifiers with the resource identifier types provided by Debique as doing so would allow for different types of content to be identified. In addition, Ritchie makes explicit mention of using Debique's *ContentDirectory* [Ritchie: section 5.1.1, page 7]. Moreover, Ritchie and Debique were released by the same organization (the UPnP Forum), share a common author (John Ritchie) and clearly state that they are "for UPnP Version 1.0" on their respective front pages. Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.

The combination of Ritchie and Debique does not explicitly disclose that *the content being simultaneously streamed over a single connection as a single unit of controlled content*.

However, Freeman discloses that *content is simultaneously streamed over a single connection as a single unit of controlled content* [Freeman: Paragraph 0063].

Ritchie-Debique and Freeman are analogous art in the same field of endeavor as both describe network media services. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the multiplexing scheme of Freeman for providing multiple media streams over a single connection as a single unit of controlled content in the media system of Ritchie-Debique. One of ordinary skill in the art would have been motivated to modify the media system of Ritchie-Debique with the multiplexing scheme of Freeman because in doing so, the system would allow for seamless switching between content [Freeman: Abstract].

Regarding claim 31, Ritchie-Debique-Freeman teaches that:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators)
[Debique: section 2.8.5.2] *including the single URL* [Debique: Page 9 Section 2.4.2
Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];

-the second channel list comprises the single URLs [Debique: section 2.8.5.2];
-the storage section is configured to store the URLs [Debique: section 2.8.5.2] *as attribute information corresponding to the content* [Ritchie: Content Item, section 5.1.1];
and

-the content distribution control section is configured to stream the content on the basis of the single URL, according to the control request from the client [Ritchie: section 5.3, item 7].

Regarding claim 33, Ritchie-Debique-Freeman teaches that:

-the content information contains protocol information [Ritchie: section 5.1.1] comprising a function ID ["channelName"], as tuner identification information, corresponding to the tuner [Debique: Appendix B]; and

-the content distribution control section is configured to set a control instance that executes control over the content [Ritchie: section 5.1.1] by executing control over the tuner based on the function ID [Debique: Appendix B, "channelName"].

Regarding claim 34, Ritchie-Debique-Freeman teaches that:

-the content distribution control section sets a control instance to execute control [Ritchie: section 5.2.2] for streaming content [Ritchie: section 5.1]; and

-a tuner [Ritchie: section 5.1] control instance that executes control over the content by controlling the tuner on the basis of the control request from the client [Ritchie: section 5.2.2].

Regarding claim 35, Ritchie-Debique-Freeman teaches that:

-the content distribution control section is configured to:

-set a control instance to execute control [Ritchie: section 5.2.2] for streaming content [Ritchie: section 5.1]; and

-execute connection management based on a connection management table [Debique: serviceStateTable, pages 60-62] comprising an instance ID [Ritchie: section 5.3, step 5] as an identifier of the control instance, a connection ID as a

connection identifier between the server and the client [Ritchie: section 5.1], and protocol information corresponding to the content [Ritchie: section 5.1.1].

Regarding claim 36, Ritchie-Debique-Freeman teaches that:

-the content distribution control section is configured to:

- *-set a control instance for streaming content wherein the control instance is configured to have an instance ID set as an identifier [Ritchie: section 5.3]; and*
- *-execute the content distribution control according to a control request from the client [Ritchie: "This InstanceID is used in conjunction with the device's AVTransport Service (i.e. the device returning the AVTransport InstanceID) to control the flow of the content (e.g. Play, Stop, Pause, Seek, etc)", section 5.3, step 5], wherein the client request designates the control instance ID [Ritchie: section 5.3, step 5].*

Regarding claim 37, Ritchie-Debique-Freeman teaches that:

-the content distribution control section is configured to:

- *-receive a control request from the client, for streaming the content, wherein the control request is compliant with a SOAP (Simple Object Access Protocol) [Ritchie: "components interact with each other using... standard UPnP protocols (e.g., SOAP over HTTP)", page 6, paragraph 5]; and*
- *-execute distribution control over the content on the basis of the control request [Ritchie: "This InstanceID is used in conjunction with the device's AVTransport*

Service (i.e. the device returning the AVTransport InstanceID) to control the flow of the content (e.g. Play, Stop, Pause, Seek, etc)", section 5.3, step 5].

Regarding claim 38, Ritchie-Debique-Freeman teaches that *the first channel list ["playlistContainer"] is configured to be set as a list formed from the plurality of channels ["channelName"] divided according to categories ["genres"]* [Debique: section 7.7].

Regarding claim 42, Ritchie-Debique-Freeman teaches *an information processing apparatus* [Ritchie: *MediaRenderer* and *Control Point*, sections 5.2 and 5.3] *that receives content from a tuner set in a server* [Ritchie: *MediaServer*, section 5.1] *via a local area network* [Ritchie: *home network*], *comprising:*

- a data transmission/reception section that executes data transmission/reception process with respect to the server that provides content via the local area network* [Ritchie: section 5.2], *wherein the tuner receives the content over channels* [Ritchie: section 5.1] *and the server stores a first channel list including the channels* [Ritchie: section 5.1, where a "TV tuner" offers channels and Debique: section 7.8, where a "playlistContainer" groups offered media in a list, including Debique: appendix B tuner channels "channelName"]; *and*

- a control section* [Ritchie: *Control Point*, section 5.3] *configured to:*

- transmit to the server, via the local area network, a content transmission request* [Ritchie: section 5.3, item 7] *including a second channel list* [Debique: section 7.8, "playlistContainer"], *the second channel list including a plurality of the channels*

included in the first channel list [Debique: section 7.8, "playlistContainer" where Ritchie: section 5.3, item 7 demonstrates that the request includes a subset of available items];
and

- *-transmit a distribution control request for the content, wherein the server designates a control instance that executes control over content streaming* [Ritchie: section 5.3, item 7],

-wherein the data transmission/reception section receives content corresponding to the plurality of channels as a single unit of controlled content, the single unit of controlled content represented by a single URL (Uniform Resource Locator) [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"]
and streamed over a single connection [Freeman: Paragraph 0063].

Regarding claim 43, Ritchie-Debique-Freeman teaches that

-the control section is configured to:

- *-transmit a connection preparation request to the server, to acquire an ID of the control instance wherein the ID comprises a tuner identification function ID* [Ritchie: section 5.1.1 "metadata" "properties" include Debique: appendix B "channelName" used for identification of tuner channels] *based on protocol information stored in the server* [Ritchie: section 5.3, step 4]; *and*

- *-transmit the distribution control request for the content, wherein the acquired control instance ID is included in the distribution control request* [Ritchie: section 5.3, step 5].

Regarding claim 45, Ritchie-Debique-Freeman teaches *a content transmission control method for transmitting content from a tuner, set in a server, [Ritchie: MediaServer, section 5.1] to a client [Ritchie: MediaRenderer and ControlPoint, sections 5.2 and 5.3] via a local area network ["home network"], wherein the tuner receives the content over channels and the server stores a first channel list including the channels [Ritchie: section 5.1, where a "TV tuner" offers channels and Debique: section 7.8, where a "playlistContainer" groups offered media in a list, including Debique: appendix B tuner channels "channelName"], comprising:*

- setting a control instance, wherein content corresponding to channels in a second channel list is set as a unit of content to execute control over streaming of the content corresponding to the second channel list [Ritchie: "this action may return the InstanceID of an AVTransport service that the Control Point can use to control the flow of this content", section 5.1.2];*

- receiving a control request, designating the control instance, from the client via the local area network [Ritchie: figure of section 6.4]; and*

- controlling the tuner by using the control instance designated in the control request [Ritchie: section 5.3, step 6]; and*

- streaming the unit of content based on the control request, wherein the unit of content is streamed over a single connection [Freeman: Paragraph 0063] and is represented by a single URL (Uniform Resource Locator) [Debique: Page 9 Section 2.4.2 Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"].*

Regarding claim 46, Ritchie-Debique-Freeman teaches that:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators)

[Debique: section 2.8.5.2] *including the single URL* [Debique: Page 9 Section 2.4.2

Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];

-the second channel list comprises the single URL [Debique: section 2.8.5.2];

and

-setting the control instance further comprises associating the single URL with the control instance [Ritchie: "the MediaServer can distinguish between multiple instances of the services (channel or channel list) by using the InstanceID (control instance)", section 5.1.3].

Regarding claim 48, the claim comprises substantially the same limitations as claims 45 and 33. The same rationale for rejection is applicable.

Regarding claim 49, the claim comprises substantially the same limitations as claims 45 and 35. The same rationale for rejection is applicable.

Regarding claim 50, the claim comprises substantially the same limitations as claims 45 and 37. The same rationale for rejection is applicable.

Regarding claim 54, the claim comprises substantially the same limitations as claim 42. The same rationale for rejection is applicable.

Regarding claim 55, the claim comprises substantially the same limitations as claim 43.
The same rationale for rejection is applicable.

Regarding claim 57, the claim comprises substantially the same limitations as claim 45.
The same rationale for rejection is applicable.

Regarding claim 58, the claim comprises substantially the same limitations as claim 54.
The same rationale for rejection is applicable.

9. Claims 32, 39, 41, 44, 47, 51, 53, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie in view of Debique and Freeman as applied to claim 30 above in and further in view of Dave Conger (*Playing Audio on Your PPC From Your Desktop*, hereafter Conger).

Regarding claim 32, Ritchie-Debique-Freeman teaches:

-the first channel list comprises a plurality of URLs (Uniform Resource Locators)

[Debique: section 2.8.5.2] *including the single URL* [Debique: Page 9 Section 2.4.2

Table 2 "URI" and Page 53 Section 2.8.9.2 last paragraph "URI"];

-the second channel list comprises the single URL [Debique: section 2.8.5.2];

and

-a connection for streaming of the content between the server and the client is an HTTP (HyperText Transport Protocol) connection [Ritchie: section 6.5] set on the basis of the single URL.

Ritchie-Debique-Freeman does not explicitly disclose that *the content distribution control section streams the content via the HTTP connection before and after channel switching, wherein the channel switching comprises switching between channels described in the second channel list.*

However, Conger teaches a method by which a single HTTP connection [Conger: Starting the Media Stream, Connecting With Your Pocket PC] may be consistently used before and after channel (“song”) switching [Conger: Extra Notes, second bullet point].

Conger and Ritchie-Debique-Freeman are in the same field of endeavor as both cover the art of streaming media across a local area network. One of ordinary skill in the art at the time the invention was made would have been motivated to modify Ritchie-Debique-Freeman’s HTTP streaming technique with Conger’s single-connection approach as doing so would allow for media to be broadcast without the break in streaming otherwise associated with switching streams. Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claim 39, Ritchie-Debique-Freeman-Conger teach the server of claim 30 as discussed above wherein:

-the content distribution control section [Ritchie: ControlPoint, section 5.3] is configured to:

- *-set a URL as an identifier for the second channel list [Debique: section 2.8.5.2];*
- *-receive an HTTP-GET method as a content request from another client, the request invoking the URL [Ritchie: section 6.5]; and*
- *-stream, through an HTTP connection, content based on the URL invoked by the client [Conger: Starting the Media Stream, Connecting With Your Pocket PC].*

Regarding claim 41, the claim comprises substantially the same limitations of claim 32. The same rationale for rejection is applicable.

Regarding claim 44, the claim comprises the limitations of claim 32 and 42. The same rationale for rejection is applicable.

Regarding claim 47, the claim comprises the limitations of claim 32 and 45. The same rationale for rejection is applicable.

Regarding claim 51, the claim comprises substantially the same limitations as claims 45 and 39. The same rationale for rejection is applicable.

Regarding claim 53, the claim comprises substantially the same limitations as claims 45 and 41. The same rationale for rejection is applicable.

Regarding claim 56, the claim comprises substantially the same limitations as claim 44. The same rationale for rejection is applicable.

10. Claims 40 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritchie in view of Debique and Freeman, further in view of Conger, and further in view of RFC 2616 (Hypertext Transfer Protocol -- HTTP/1.1, hereafter RFC 2616).

Regarding claim 40, the claim comprises substantially the same limitations as claim 32. The same rationale for rejection is applicable. The claim further comprises the additional limitations that:

- the content distribution control section is configured to:
 - determine whether or not streaming to the client can be maintained even when there is switching between the channels described in the second channel list; and
 - execute breakage of the HTTP connection where it is determined that the streaming cannot be maintained; and
 - the content providing server is configured to notify breakage information about the HTTP connection via an event notification connection between the server and the client.

Ritchie-Debique-Freeman does not explicitly disclose a means for determining whether the coded data transmission to the client can be maintained, for breaking the transmission if it cannot, and for notifying the client of HTTP breakage. However, RFC 2616 teaches that the server may become aware that it is incapable of performing a client request [RFC 2616: section 10.5, first paragraph and section 10.5.1] and also that the sever will break ["close"] an HTTP connection on an error [RFC 2616: section 10.4, second paragraph]. Additionally, RFC 2616 teaches a plurality of error codes (e.g., 409, 500, 501) that are used in the process of notifying breakage information about the HTTP connection via an event notification connection between the server and the client [RFC 2616: *response status code*, section 10.5, first sentence].

RFC 2616 and Ritchie-Debique-Freeman are in the same field of endeavor as both cover the art of streaming data across a network. One of ordinary skill in the art at the time the invention was made would have been motivated to modify Ritchie-Debique-Freeman's HTTP server and streaming technique with RFC 2616's response status codes and error reporting procedures as doing so would allow for clients to be notified of errors via a standardized set of codes and allow for a graceful close of connections. Therefore, the invention as a whole would have been "*prima facie* obvious" to one of ordinary skill in the art at the time the invention was made.

Regarding claim 52, the claim comprises substantially the same limitations as claims 45 and 40. The same rationale for rejection is applicable.

Conclusion

11. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the text of the passage taught by the prior art or disclosed by the examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IMAD HUSSAIN whose telephone number is (571) 270-3628. The examiner can normally be reached on Monday through Friday from 0800 to 1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2157

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